

CTE Standards Unpacking
Introduction to Auto Body and Estimating

Course: Introduction to Auto Body and Estimating

Course Description: This course is designed to expose the students to different industry terminology, safety practices, auto body estimating and basic auto body repairs. This course is for the students to receive basic industry based training before stepping up to higher level courses in this field.

Career Cluster: Transportation, Distribution & Logistics

Prerequisites: N/A

Program of Study Application: Introduction to Auto Body and Estimating is a first pathway course in the Transportation, Distribution and Logistics career cluster, Automotive Body Collision and Refinishing pathway.

INDICATOR #IAB 1: Students will demonstrate understanding of auto body safety practices and careers.		
SUB-INDICATOR 1.1 (Webb Level: 2 Skill/Concept): Demonstrate auto body safety practices		
SUB-INDICATOR 1.2 (Webb Level: 2 Skill/Concept): Analyze career opportunities in the Transportation, Distribution, & Logistics career cluster		
Knowledge (Factual): -Safety practices needed -Proper personal safety equipment and gear -Federal, State and Local safety and hazard regulations -Vehicle system hazard types, locations and recommended procedures before inspecting or replacing components -General vehicle systems -Pathways and careers in the Auto Body field	Understand (Conceptual): -Consequences of failed safety practices -Importance of recommended procedures -Relationship between careers available and workers to fill them	Do (Application): -Select and use proper personal safety equipment; take the necessary precautions with hazardous operations and materials in accordance with federal, state, and local regulations. -Locate procedures and precautions that may apply to the vehicle being repaired. -Identify vehicle system hazard types, locations and recommended procedures (supplemental restraint system (SRS), hybrid/electric/alt. fuel

		<p>vehicles) before inspecting or replacing components.</p> <p>-Identify related careers of auto body</p> <p>-Interview industry leaders for career explorations</p>
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Benchmarks:

Students will be assessed on their ability to:

- Complete NATEF Tasks that pertain to safety
- OSHA 10 Certification
- Completed resume pertaining to Autobody field occupation opening

Academic Connections

ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):	Sample Performance Task Aligned to the Academic Standard(s):
<p>SL4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks</p>	<p>Students will present information gained from interview with industry leader.</p>

INDICATOR #IAB 2: Demonstrate uses of auto body tools and equipment.

SUB-INDICATOR 2.1 (Webb Level: 2 Skill/Concept): Demonstrate hand and power tools and their uses

SUB-INDICATOR 2.2 (Webb Level: 3 Strategic Thinking): Analyze uses of a compressed air system

Knowledge (Factual): -Names of tools and their uses	Understand (Conceptual): -Consequences of misuse of compressed air systems	Do (Application): -Demonstrate use of hand tools and equipment.
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<p>-Safety procedures when using tools</p> <p>-Components and operations of electrical systems</p> <p>-Components and operation of a compressed air system</p> <p>-Maintenance of tools and equipment</p>	<p>-Difference between compressed air (pneumatic) and electric</p> <p>-Consequences of improper maintenance</p>	<p>-Demonstrate use of compressed air in different operations.</p> <p>-Demonstrate use of electric tools in different operations.</p> <p>-Identify situations to use hand-powered vs. Powered tools.</p> <p>-Show how to maintain tools.</p>
<p>Benchmarks: <i>Students will be assessed on their ability to:</i></p> <ul style="list-style-type: none"> • Complete NATEF Tasks that pertain to compressed air systems. • Project to demonstrate the use of hand and power tools. Example: Remove filler with sanding block vs. Air sander. See which is straighter, which is smoother. 		
<p><i>Academic Connections</i></p>		
<p>ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):</p> <p>FIF8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.</p> <p>SL4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks</p>	<p>Sample Performance Task Aligned to the Academic Standard(s):</p> <p>Students will create an equation modeling the air compression system.</p> <p>Students will explain proper use of power and hand tools.</p>	

INDICATOR #IAB 3: Employ collision repair estimating processes		
SUB-INDICATOR 3.1 (Webb Level: 3 Strategic Thinking): Demonstrate the process involved in obtaining important information		
SUB-INDICATOR 3.2 (Webb Level: 2 Skill/Concept): Demonstrate the process of writing a repair estimate		
Knowledge (Factual): -Information needed for repair estimate -Available software -Terminology used in estimating and repair -Location and meaning of vehicle build codes -Current labor costs	Understand (Conceptual): -How the software used in estimate writing can make your life easier -Differences between current accident damage and pre-existing damage -Importance of processes used in damage repair (some parts need to be removed to gain access to damage)	Do (Application): -Locate and record vehicle information and owner information in order to start a repair estimate. -Decode a Vehicle Identification Number (VIN) -Decode vehicle build codes -Identify and record pre-existing damage. -Prepare vehicle for inspection by providing access to damaged areas. -Analyze damage to determine appropriate methods for overall repairs. -Find prices for parts, labor, materials -Total up subcategories to complete repair estimate
Benchmarks: <i>Students will be assessed on their ability to:</i> <ul style="list-style-type: none"> • Complete NATEF Tasks that pertain to collision repair estimating processes. • Complete repair estimate accurately. 		

Academic Connections	
<p>ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard):</p> <p>G-MG3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).</p> <p>W2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.</p>	<p>Sample Performance Task Aligned to the Academic Standard(s):</p> <p>Students will use geometric ideas to create an estimate of amount of material needed to repair a car</p> <p>Students will prepare a written estimate for vehicle repair</p>

INDICATOR #IAB 4: Apply auto body repair and finishing techniques.		
SUB-INDICATOR 4.1 (Webb Level: 2 Skill/Concept): Demonstrate basic auto body repair techniques		
SUB-INDICATOR 4.2 (Webb Level: 2 Skill/Concept): Demonstrate processes in automotive finishing		
<p>Knowledge (Factual):</p> <ul style="list-style-type: none"> -Proper corrosion protection methods -Welding processes -Metal straightening techniques -Filler options -Purpose of block sanding -Plastic repair techniques -What is overspray and how to prevent it 	<p>Understand (Conceptual):</p> <ul style="list-style-type: none"> -Proper corrosion protection methods and why you apply them -Effect of corrosion and the longevity of a quality repair -Effects of expansion/contraction from heat to manipulate metal -Uses of different body fillers -How different techniques effect block sanding outcomes 	<p>Do (Application):</p> <ul style="list-style-type: none"> -Demonstrate Hammer and Dolly procedures -Prepare different surfaces properly -Demonstrate the use of refinishing equipment (including maintenance) -Apply overspray protection -Perform a spray gun test

-Proper refinishing procedures	-Consequences of incorrect sandpaper grits -Importance of proper overspray protection -Importance of proper surface preparation -Uses of refinishing equipment	
Benchmarks: <i>Students will be assessed on their ability to:</i> <ul style="list-style-type: none"> Project to demonstrate the use of auto body repair and finishing techniques. Example: take a fender from damaged state to a refinished state. Stand back and admire. 		
<i>Academic Connections</i>		
ELA Literacy and/or Math Standard (if applicable, Science and/or Social Studies Standard): SL4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range or formal and informal tasks	Sample Performance Task Aligned to the Academic Standard(s): Students will explain auto body repair and refinishing techniques used in their project. Students will create a cost estimate for the project that they are working.	

Additional Resources

Please list any resources (e.g., websites, teaching guides, etc.) that would help teachers as they plan to teach these new standards.